U.S. Department of Transportation
Federal Aviation Administration

Advisory Circular

Subject: AIRPORT EMERGENCY MEDICAL FACILITIES AND SERVICES

Date: 11/27/84
Initiated by: AAS-300

AC No: 150/5210-2A
Change:

1. PURPOSE. This advisory circular (AC) deals with emergency medical facilities and services at civil airports. It discusses the role of medical facilities in regard to major emergencies such as aircraft accidents and outlines those services and facilities considered necessary for first-aid treatment of injuries and illnesses occurring among the airport population including the traveling and visiting public. The objective of this AC is to provide information and advice so that airports may take specific voluntary preplanning actions to assure at least minimum first-aid and medical readiness appropriate to the size of the airport in terms of permanent and transient personnel. Industrial and preventive medical programs are not included in this discussion.

2. CANCELLATION. AC 150/5210-2, Airport Emergency Medical Facilities and Services, dated September 3, 1964, is cancelled.

3. GENERAL. An airport is the focus of many activities; commercial, industrial, governmental, and recreational. All of these serve and require the services of people. The resulting airport population fluctuates by the hour with traffic volume and tenant activity. Regardless of the number of people at the airport, a sound emergency first-aid and medical-aid program is justified by the compelling humanitarian and economic advantages of prompt treatment of minor or serious injuries.

4. SCOPE. Many airports have sizeable or reasonably adequate medical and/or first-aid facilities presently existing. Recommendations and procedures are presented here to help the airport management evaluate and plan their role in medical emergencies and in establishing or augmenting, as appropriate, medical-aid facilities at civil airports. While the guidance presented in this AC highlights emergency medical needs, it should be noted that some large airports have instituted programs of industrial health which offer support to the airport emergency operations plan, plus complete health service to employees. It is obvious that many aeronautical factors effect this type of total medical service planning. Information on occupational health, employee medical programs, and hospital care may be obtained from the U.S. Public Health Service, local health departments and medical societies.

5. PLANNING ASSISTANCE. To be sure of the adequacy of airport emergency medical plans and aid programs, airport management should invite local medical authorities to assist in program development. Designated FAA Aviation Medical Examiners may be helpful in this planning. Local hospitals, health departments, volunteer rescue units, Red Cross, and members of the Flying Physicians Association are recommended points of contact for advice and assistance. Factors to be considered include:

   a. Professional assistance available through local physicians.

   b. Availability of trained first-aid personnel.

   c. Emergency treatment facilities, equipment, and supplies located at the airport.

   d. Availability of professional supervision during emergency operations.

   e. Mutual aid from hospitals, Red Cross, Civil Defense, etc.

   f. Established notification and response procedures for medical assistance.

6. ESTABLISHMENT. Many important medical, administrative, and operational factors effect the establishment and operation of an airport emergency medical service. The decision to develop this capability depends mainly on a thorough analysis of airport needs and resources. Conditions vary enough from one airport to another that the final decision must be based on competent local judgment. This advisory circular cannot cover individual conditions; it does, however, present material upon which sound judgments may be based.

7. OPERATIONAL FACTORS EFFECTING MEDICAL CAPABILITY. For medical facility planning, civil airports may be grouped as follows:

MEDICAL GROUP	*PROPOSED AIRPORT INDEX	
I SMALL	1	Smallest airports
	2	
	3	
II MEDIUM	4	
	5	
	6	
	7	
III LARGE	8	Largest airports

*Airport index developed by the Airports Service is based on operational factors, etc. See Appendix 3. The index does not represent Agency

policy but is used herein as an aid in determining what medical facilities are appropriate for airport(s) use.

8. BASIC CONSIDERATIONS. Obviously, there are a large number of airports where the volume of activity does not justify elaborate medical facilities. Therefore, certain basic actions should be taken at all airports regardless of grouping. Briefly stated they are:

   a. Designate an airport medical advisor and backup first-aid specialist.

   b. Establish a procedure through which medical aid may be summoned.

   c. Write an emergency plan, keep it current, and test its procedures to keep key personnel familiar with their stations and emergency duties.

   d. Inventory the actual emergency medical resources that may exist on the airport such as airline or industrial personnel trained in first-aid and the location of first-aid kits or equipment.

9. MEDICAL FACILITY STANDARDS. From the list of general supplies and equipment contained in Appendix 2, which are used in crash and rescue situations, the medical advisor can give sound advice on the most appropriate supplies to stock in an airport medical facility. He can also advise airport management on first-aid room layout as recommended in Appendix 1. Minimum equipment and supply standards may be correlated to airport codification as follows:

MINIMUM AIRPORT MEDICAL FACILITIES

INDEX 1. . . . . A commercially available first-aid kit or
INDEX 2. . . . . a kit assembled under the guidance of the
INDEX 3. . . . . airport medical advisor.

INDEX 4. . . . . Medical needs and resource levels overlap
INDEX 5. . . . . and vary to such extremes, it would be
INDEX 6. . . . . impractical to identify minimum standards
INDEX 7. . . . . for each. As experience data becomes available, a more definitive breakdown will be attempted.

INDEX 8. . . . . A comprehensive medical aid facility.

   a. From a practical viewpoint and because medical judgment cannot be categorized, it is illogical to assume that because an airport falls into one of these indices, it should limit its medical facility to minimum standards.

b. The comprehensive medical aid facility listed for INDEX 8 airports is based on those presently existing at this type airport; medical facilities generally accepted as meeting safe operational levels in commerce and industry.

10. COMPREHENSIVE MEDICAL AID FACILITY. The pattern for establishing and operating a medical facility that provides emergency treatment at an INDEX 8 airport falls into two categories.

a. Private Initiative. In its simplest definition, this method may be considered an airport concession where doctors in private practice establish a clinic and offer a variety of medical services including emergency care to the airport population.

b. Institutional Initiative. This pattern is a cooperative contract between the airport authorities and local hospital authorities to establish and operate a clinical facility at the airport.

It should be noted that there are many INDEX 7 airports that can easily justify and should establish medical aid facilities that are comparable to those recommended for INDEX 8 airports. There is no distinct line of demarcation between the indices for levels of medical aid or patterns of establishment based solely on annual movements or route segments.

11. AIRPORT MEDICAL ADVISOR. An airport manager, in establishing a medical assistance program has a significant number of community resources available for advice. Various organizations and individuals will be helpful during the formative stage. After the initial effort, however, it will become evident that a specific individual or a small group will be most effective in developing procedures for emergency plans and professional services. It is important that this individual or group be identified as early as possible and persuaded to act as the airport medical advisor or advisory group.

12. DUTIES OF THE MEDICAL ADVISOR. The medical advisor can assist in many ways. He should be familiar with the type and amounts of operational activity, the airport layout, the number of passengers, visitors, and employees on the airport, and potential hazards. He will have knowledge of community problems effecting the airport and its medical assistance needs. He can recommend and assist in establishing casualty evacuation procedures that will be compatible with local hospital capabilities and should the airport be of sufficient size to warrant more than a first-aid kit, he can give valuable advice regarding facilities and services to satisfy the needs of the airport. His knowledge of community medical resources will be of value when developing mutual aid agreements. His professional judgment will be invaluable in outlining procedures for medical facility operations. If it is determined that a physician should be retained or clinical facilities should be maintained, the medical advisor can be the point of contact between the airport and interested doctors and hospitals.

13. FIRST-AID. Some degree of immediate medical assistance should be administered promptly following an injury or until the injured or ill person can be taken to a physician. An important purpose of an airport medical-aid program is to outline what to do until the doctor arrives. This will range from a fundamental stop the bleeding and call the rescue squad procedure at a small airport to on the scene first-aid given by trained airport fire and rescue personnel or responding medical units established at more active airports. The point is, trained first-aid specialists on or near the airport should be predesignated and should know what is required of them as backup to professional physicians. First-aid equipment and supplies are discussed in subsequent paragraphs.

14. CALL FOR MEDICAL AID. The established communication system in most communities is the public telephone. It is important, therefore, that telephone numbers of doctors, hospitals, and aid units be known, prominently posted, and always kept current. Other communication procedures will depend on the type of communication equipment available; in any event, the important thing is to know who is responsible for making the call, who to call, and how to get the message through.

15. ROLE OF THE FIRE AND RESCUE SERVICE IN MEDICAL AID. Emergency or disaster control at airports, particularly in cases where the incident or accident involves an aircraft, is an exceedingly complex and technical problem. Damage control, rescue efforts, emergency medical aid as well as preservation of evidence required for investigation, are all necessary components. The emergency medical aspects of disaster control cannot actually take place until there has been suitable control of the immediate hazard and the rescue of personnel. The Fire and Rescue Service plays a key role and bears initial responsibility for implementing necessary rescue and first-aid actions at a disaster scene. All fire and rescue personnel (including volunteers) should be required to receive at least Red Cross minimums of first-aid training. Simulated emergency medical treatment drills, familiarization with equipment such as resuscitators and inhalators should follow as a continuing planned activity. Airport fire and rescue procedures should be tied in closely with the activities of other fire and rescue units in jurisdictions surrounding the airport. This is part of the mutual aid system usually established between neighboring fire and rescue departments. An airport medical advisor can provide valuable assistance and direction in establishing effective medical action plans for the fire and rescue service and mutual aid from community medical facilities and services in the airport area.

16. FIRST-AID ROOMS. Many airports have already set aside small first-aid rooms. In some instances, space has been expanded to accommodate a nurse and doctor. Airports having no adaptable terminal building space have frequently established first-aid facilities in the Fire and Rescue Station. INDEX 1, 2, and 3 airports, and in some instances those in INDEX 4, find that minimum criteria for a first-aid room is merely the most suitable place where first-aid equipment and supplies can be stored. This may be entirely adequate as long as access to the space

and first-aid kit is properly marked and supervised. For airports that can make space available, possible designs for space utilization are shown in

17. FIRST-AID EQUIPMENT. In planning for first-aid equipment (see Appendix 2, pages 1-4) the airport administration should consult with their medical advisor. In general, there are many sizes of standard kits available frequently suggested by the American Red Cross. These contain standard compresses, bandages, tourniquets, eye dressings, burn ointments, and antiseptic solutions. This type of kit should be augmented with blankets, ammonia inhalants, soap, towels, flashlights, and identification tags. A moderate (small bag) list of medical items for administering first-aid is listed in Appendix 2, page 4. At very small or inactive airports, one of the smaller (Red Cross) type kits may suffice as a minimum safety precaution. At airports where first-aid rooms are available, more sophisticated kits can be developed which are commensurate with requirements and skill of the personnel using them. Appendix 2, pages 1-3, lists equipment commonly used in aircraft rescues. These lists are for general guidance and should not be considered the minimum or ultimate in equipment needs. Some items of medical-aid equipment require professional assistance in assembling and utilization and it is recommended that no item be purchased or used without professional supervision or training. At some airports, each major airline maintains a "disaster trunk" or foot locker which contains first-aid equipment, blankets, etc. Upon notification that an emergency exists, these trunks are all brought to predesignated central points; usually the emergency rescue equipment building.
NOTE: The use of "throw away"—disposal—blankets is suggested.

18. RESCUE EQUIPMENT. A rescue vehicle with special equipment is highly desirable at active airports. Equipment on such a vehicle should include special tools for cutting into and entering an aircraft and should include torches, floodlights, blankets, litters, and a resuscitator/inhalator. First-aid kits and medical supplies should also be carried in the vehicle.

19. MEDICAL HOLDING STATION. In the over-all airport emergency plan, it is advisable to designate a holding area for crash victims. Such an area is essential to the early restoration of normal operations following a large aircraft accident. This holding area should not be confused with the airport first-aid facility. Under conditions where a large number of casualties occur, a normal first-aid room would be overtaxed. A hangar or other large area which can be blocked off from curiosity seekers or other interference should be provided for first-aid and medical and accident investigating teams. Several large airports have designated such areas and stocked them with folding litters and blankets. An area might also be predesignated as a temporary morgue. Identification and claiming by next of kin can often be made here, obviating the necessity for double handling of the remains via the city morgue.

20. MEDICAL EVACUATION. A plan for speedy evacuation and subsequent care of accident victims is an essential part of the medical-aid plan. Factors such as the availability of ambulances and the number, capacity, and location of hospitals or clinics capable of handling mass casualties will effect details of the action. Each airport will have its own particular procedures. The following basic considerations should be applied in developing a plan.

a. Physicians at an accident scene are rarely equipped to provide any medical care that cannot be almost equally provided by trained first-aid specialists. Prompt life saving first-aid is "first" in a majority of cases. The patient then lives to benefit from complete followup and recovery care of an appropriate medical facility.

b. Some cities consider it sufficient to detail one physician to an accident scene where he acts as a first-aid supervisor and in dispatching the seriously injured to treatment centers according to medical principles that will result in a high survival rate.

c. Ideally, accident victims should be sent directly to the emergency facilities of local hospitals for proper care. No unnecessary delay at airport first-aid stations should be permitted. Note, however, that mass casualty handling may alter this consideration. No hard and fast rule can replace professionaly judgment in this matter.

d. An orientation program should be established to familiarize responding ambulance units with the airport and access roads prior to any emergency. An airport grid map should be made available to all affected units.

e. It will be helpful to have a predesignated marshalling area on the airport for all police, fire, and medical units which respond from off the airport. When such units reach the marshalling area they can be escorted to the accident scene, medical holding station, etc., as necessary by airport security personnel.

21. SAFETY SURVEY. Periodic airport safety surveys, and review of past incidents and accidents, will help identify potentially unsafe conditions and define emergency medical needs. Continued management action to note and correct hazardous conditions will support the excellent safety record of our national airport system.

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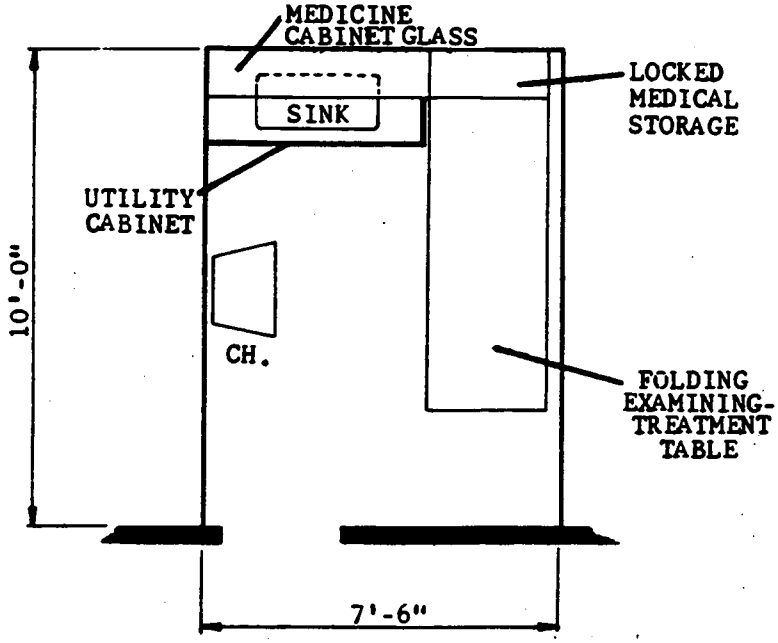


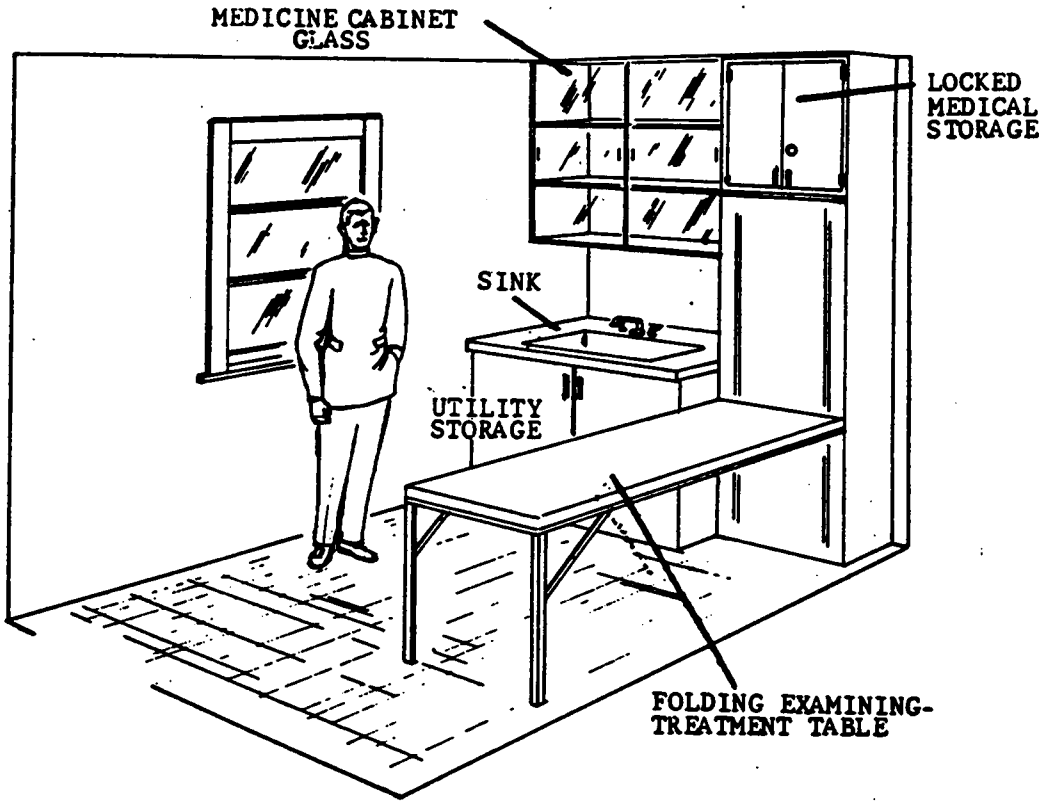
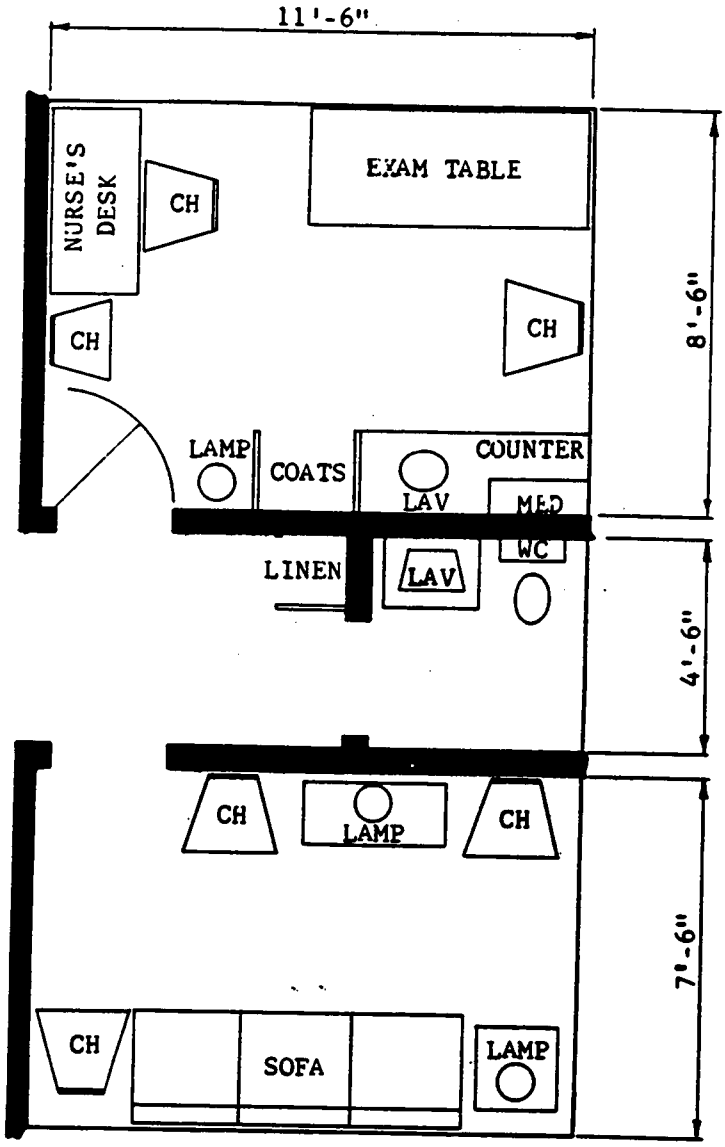


Figure 1 First Aid Room



SCALE 1/4" = 1'0"

Figure 2

A Suggested Minimum Medical Service Station For An Airport

* RESCUE MEDICAL CHEST

Inside Cover

1 - Kelly clamp
2 - Knife handles & blades
6 - Mosquito clamps
5 - Snaps
2 - Forceps
5 - Suture scissors
10 - Sterile syringes, 2½cc (with needles)
2 - Pens
2 - Red skin pencils
6 - Tongue blades
1 - Large bandage scissors

Box:

Medications:

50 - Alcohol prep. sponges
6 - Merthiolate swabs (box)
2 - Ammonia inhalant (box)
5 - Coramine ampoules, 1.5 ml.
3 - Aramine vials, 10 mg/cc (10cc)
1 - Solumedrol vial, 40 mg. (1cc)

Adhesive:

3 - Rolls 1" adhesive
3 - Rolls ½" adhesive

Bandages:

6 - Boxes vaseline gauze (3"x18")
6 - Boxes triangular bandage
12 - Bandage compresses
9 - Small pressure bandages
9 - Medium pressure bandages
4 - Large pressure bandages
2 - Bandage rolls (1"x 10 yds)

Miscellaneous Equipment:

6 - Boxes tourniquets
10 - Packages sterile gloves
1 - Brook airway

Lower Compartment

Dressings & Bandages:

6 - Abdominal pads
3 - Neuro head rolls
2 - Combine dressings
3 - Heavy "Lister" dressings pads
3 - Large pressure bandages
8 - 1" bandage rolls
12 - 2" bandage rolls
4 - Ace bandage rolls

Syringes:

1 - 20cc
1 - 30cc
1 - 50cc

Jet Splints:

2 - Full leg
2 - Foot and ankle
5 - Wood splints

Emergency Equipment:

1 - Minor emergency suture box
3 - Resuscitube
2 - Tourniquets
2 - Tracheotomy tubes, #6
2 - Tracheotomy tubes, #7
5 - Wooden splints (3½"x18")

Miscellaneous:

25 - Triage tags
Crayons - 2 red, 2 yellow
4 orange, 2 black
6 - Arm bands
Safety pins

8 - Wire splints
1 - Flashlight
2 - Disposable razors

*These are suggested lists; neither minimum nor maximum. Consult your airport medical advisor for development of kit(s) suitable to your airport.

*BURN CHEST

Cover Section:

3 - Tracheotomy tubes
2 - Knife handles & blades
1 - Bandage scissors
6 - Hemostats
2 - Kelly clamps
3 - Airways
3 - Resuscitubes

Dressings & Bandages

12 - 5 x 4 Gauze pads
6 - Half sheets
6 - Neuro head rolls
9 - Large dressings
6 - Ace bandages, 2"
3 - Ace bandages, 4"
5 - Boxes vaseline gauze (3x36")
4 - Rolls adhesive tape, 2"
20 - Alcohol sponges
Safety Pins

Intravenous Equipment:

2 - 5% D/W 500cc
1 - 10% D/W 500cc
3 - I.V. Sets

Miscellaneous:

25 - Sterile 2cc syringes
6 - Disposable needles, #19
6 - Disposable needles, #22
10 - Disposable needles, #25
6 - Sterile disposable gloves
6 - Tourniquets
2 - Arm splints
4 - Pens
Colored Crayons: Red, Orange, Yellow, Black

*FRACTURE CHEST

Cover Section

3 - Airways
3 - Resuscitubes
3 - Plastic tracheotomy tubes
1 - Knife handle & blade
1 - Bandage scissors
2 - Sterile Kelly clamps
12 - Throat sticks
4 - Pens
6 - Hemostats
6 - Triangular bandages
7 --Wooden arm splints
15 - Wooden leg splints
Jet Plastic: 1 - foot & ankle
1 - hand & wrist
1 - half arm
1 - full arm
1 - leg

I.V. Equipment

2 - I.V. Sets
2 - 5% D/W (500cc)
6 - Tourniquets
6 - Rolls adhesive tape
25 - 2cc Syringes & needles
14 - Pkgs. combine dressings
Colored Crayons: Red, Orange, Yellow, Black
25 - Triage tags
20 - Alcohol sponges

Cover Section cont.

3 - Cervical collars
6 - Ace bandages, 3"
6 - Ace bandages, 2"
6 - Sterile disposable gloves

*These are suggested lists; neither minimim nor maximum. Consult your airport medical advisor for development of kit(s) suitable to your airport. All airports should have at least minimum first-aid capabilities.

*LARGE EMERGENCY BAG

Ampoules & Vials:

7 - Adrenalin, 1:1000
1 - Aminophyllin, 250 mgm
4 - Cedalandid, 0.4 mgm
2 - Coramine
5 - Lanoxin, 0.25 mgm/cc
1 - Caff. & Sod. Benzoate 500 mgm
1 - Amobarbital, 0.25 gm
1 - Aramine, 10 mgm/cc
1 - Dilantin, 0.1 gm
1 - Sterile water
1 - Sterile saline
2 - Compazine, 10 mg.
1 - Dextrose, 25 gm.

Oral Medications:

1 - Librium, 10 mgm
12 - Marezine, 50 mgm
Dramamine
1 - Chloro-Trimeton, 12 mg.

Narcotics:

2 - Morphine sulfate, 10 mg.
12 - Meperidene, 50 mg.

Eye Medications:

1 - Sodium Chloride

Inhalants:

4 - Ammonia

Syringes:

1 - Insulin, U40 Reg.
2 - Syringes, 20cc
2 - Syringes, 30cc
1 - Syringe, 50 cc
12 - 2½cc Sterile disposable syringes
Sterile swabs

Instruments:

2 - (each) Knife blades 10 & 15
1 - Knife handle, #3
1 - Kelley
1 - Snap

Equipment:

Bandaids
1 - Airway
1 - Flashlight
1 - Resuscitubes
3 - Tourniquets
Blood Pressure apparatus & stethoscope
12 - Gauze squares
1 - 3" elastic bandages
1 - 2" elastic bandages
6 - Eye droppers
1 - Sling
12 - Throat sticks
1 - Box tissues
Files
2 - Neuro head rolls
1 - Comp. pads
4 - Gelfoam 20 x 60 mm
5 - Gloves, sterile disposable
12 - Paper cups
20 Alcohol prep.
3 - Mouth gags
2 - Pens
Medical Station Forms
1 - Emesis basin
Safety pins
1 - 1" Kling bandage
1 - 2" Kling bandage
Mesaline Towels
6 - Emesis bags
1 - Roll, 1" adhesive
1 - Large scissors
Needles: 8 - GA 20
7 - GA 25
6 - GA 22

*NOTE: Narcotics and other specialized drugs must be kept under lock and key and administered only by physicians. Consult your medical advisor.

*SMALL EMERGENCY BAG

Medication, Injectable:

3 - Vials Adrenalin, 1:1000
1 - Vial Aminophyllin, 250 mgm
1 - Vial Cedalanid, 10.4 mgm
2 - Vials Coramine
4 - Vial Lanoxin, 0.5 mgm
3 - Vials Caffeine & Sodium Benzoate, 500 mgm
1 - Vial Amobarbital, 0.25 gm.
1 - Vial Aramine, 10 mgm/cc
1 - Vial sterile water
1 - Vial sterile saline
1 - Vial Dilantin, 0.1 gm.
2 - Vials Compazine, 10 mgm/cc
1 - Vial Dextrose, 25 gm.

Medication, Oral:

1 - Bottle Librium, 10 mgm
1 - Bottle Merazine, 50 mgm

Eye Medication:

1 - Bottle Sodium Chl., 1.4%

Narcotics:

2 - Vials Morphine Sulfate, 10 mg.
2 - Vials Meperidine, 50 mgm/cc

Equipment:
Files
Bandaids
1 - Airway
1 - Flashlight
1 - Resuscitubes
3 - Tourniquets
10 - Gauze squares
1 - 2" Ace bandage
2 - 3" Ace bandage
6 - Eye droppers
6 - Mesaline towels
Safety Pins
1 - Sling
12 - Throat sticks

Inhalants:

5 - Amps. ammonia (aromatic)

Syringes:

1 - Insulin, U40 syringe
1 - 20cc syringe
1 - 30cc syringe
1 - 50cc syringe
6 - 2½cc disposable sterile syringes

Needles:

8 - 25 gauge hypo
5 - 22 gauge IM
6 - 20 gauge IM and IV
1 - 19 gauge IM and IV

Instruments:

1 - Knife handle
2 - Knife blades, #5
2 - Knife blades, #11
1 - Kelly clamp
1 - Snap

Equipment:

2 - Neuro head rolls
1 - Comp pads.
1 - Jar gelfoam
5 - Sterile disposable gloves
12 - Paper cups
20 - Alcohol preps
3 - Mouth gags
2 - Pens
2 - 1" Kling bandage rolls
2 - 2" Kling bandage rolls
1 - Roll 1" adhesive
1 - Steri-Strips, ½"
1 - Steri-Strips, 1/8"
1 - Emesis basin
6 - Emesis bags
1 - Box Tissues

*NOTE: Narcotics and other specialized drugs must be kept under lock and key and administered only by physicians. Consult your medical advisor.

AIRPORT INDEX

(Basis: Largest aircraft and fuel and payload measured by en-route segment.)

INDEX 1. Small unattended airports.

INDEX 2. Airports used exclusively by single-engine aircraft with seating capacity not exceeding four.

INDEX 3. Airports serving single-engine aircraft seating five or more and/or twin-engine aircraft grossing under 12,500 pounds with annual movements totalling 10,000 or more.

INDEX 4. Airports serving general aviation aircraft grossing over 12,500 pounds with annual movements exceeding 10,000 or transport operations exceeding 2,800 movements annually with en route segments from 0 to 200 miles.

INDEX 5. Airports serving transport operations exceeding 2,800 movements annually with en route segments from 200 to 400 miles (piston).

INDEX 6. Airports serving transport operations exceeding 2,800 movements annually with en route segments from 400 to 1,000 miles (jet).

INDEX 7. Airports serving transport operations exceeding 2,800 movements annually with en route segments from 1,000 to 2,600 miles (jet).

INDEX 8. Airports serving transport operations exceeding 2,800 movements annually; intercontinental flights (jet)

NOTE: 2,800 transport movements/year = (approx.) 4 flights/day.
10,000 movements/year = (approx.) 15 flights/day.